

Developing and executing 'C' programs (Electricity Bill preparation) by using Structure

Date :

Introduction :

Array can be used to represent a group of data items that belong to the same type, such as int or float. If we want to represent a collection of data items of different types using a single name. It should be done by structure concept.

C supports a constructed data type known as structures, a mechanism for packing data of different types. A structure is a convenient tool for handling a group of logically related data items. For example, it can be used to represent a set of attributes, such as student _ name, roll _ number and marks.

Structure Definition:

The general format of a structure definition is as follows:

```
struct tag _ name
{
    data _ type    member1;
    data _ type    member2;
    -----
    -----
};
```

Ex:

```
struct sales
{
    char name[20];
    int reg_no[15];
    char prod_name[20];
    float basic_pay;
    float sales_amt;
};
```

Here, 'sales' is a constructed data type (Derived data type). The fields such as name, reg_no, prod_name, basic_pay and sales_amt are called **structure elements** or **members**.

Structure Declaration:

The general format of a structure declaration is as follows:

Syntax 1:

struct tag_name s1,s2,sn;

Here s1,s2,sn are structure variables;

Ex:

```
struct sales  salesman1,salesma2,salesman3;
```

Here salesman1,salesma2,salesman3 are structure variables

Syntax 2:

We can combine structure definition and declaration as a single unit

```
struct tag _name
{
    data _type    member1;
    data _type    member2;
    -----
    -----
} s1,s2,...sn;
```

```
Ex;
struct sales
{
    char name[20];
    int  reg_no[15];
    char prod_name[20];
    float basic_pay;
    float sales_amt;
} salesman1,saleman2,salesman3;
```

The link between a member and a structure variable is established using the member operator ‘.’ Which is also known as ‘dot operator’ or ‘period operator’.

```
Ex:  salesman1.name
      salesman1.reg_no
      salesman1.prod_name
      ....
      ....

      salesman2.name
      salesman2.reg_no
      salesman2.prod_name
      ....
      ....
```

Exercise : Write C programme to prepare a Electricity Bill using Structure.

